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ABSTRACT

The Living Systems Framework was used to generate four categories of parent behaviors that might affect processes responsible for eliciting prosocial behavior in children: (1) teaching values, rules, and standards; (2) providing opportunities for rehearsal and mastery; (3) providing opportunities for self-regulation and self-control; and (4) providing social and emotional support. Data on parent and child behavior were obtained through questionnaires and observations made over a 6-week period in home and play group settings. Assessed prosocial behaviors of children were compassion, amiability with peers, remorse, and obedience. Each behavior was assessed in the presence or absence of rule, and in the presence or absence of another person in distress. Subjects were 28 mothers and their firstborn, home-reared children between the ages of 20 and 31 months, with a mean age of 2 years. Results suggested that in young children prosocial behavior may be more a function of learning prosocial scripts and habits than learning principles of conduct. Thus child prosocial behavior correlated most strongly with provision of opportunities for rehearsal and mastery of prosocial behavior, and not at all with the teaching of values, rules, and standards. Provision of social and emotional support correlated with most of the child prosocial behaviors. Finally, mothers' provision of opportunities for self-regulation and self-control was correlated with child prosocial behaviors involving the presence of rules, suggesting that highly controlling techniques may detract from their intended effect. (RH)

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MOTHER-CHILD INTERACTION AND PROSOCIAL DEVELOPMENT IN TODDLERS: A MULTIVARIATE STUDY USING THE LIVING SYSTEMS FRAMEWORK

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Christi A. C. Bergin

The purpose of the present study was to examine the relationship between mothers' behavior and their children's prosocial behavior. It is difficult to integrate the literature on prosocial behavior to produce a clear understanding of how parents might effect its development. Mussen (1977) asserts that a central problem in prosocial research is the lack of an adequate theory. However, the Living Systems Framework (LSF) provides a comprehensive model that has potential value for producing such an integration (D. Ford, in press). The LSF describes the complex interaction of processes within the child that are responsible for organizing prosocial behavior. The study reported here is a multivariate study designed to investigate the degree to which each process may play a role in children's prosocial behavior.

What is the Living Systems Framework?

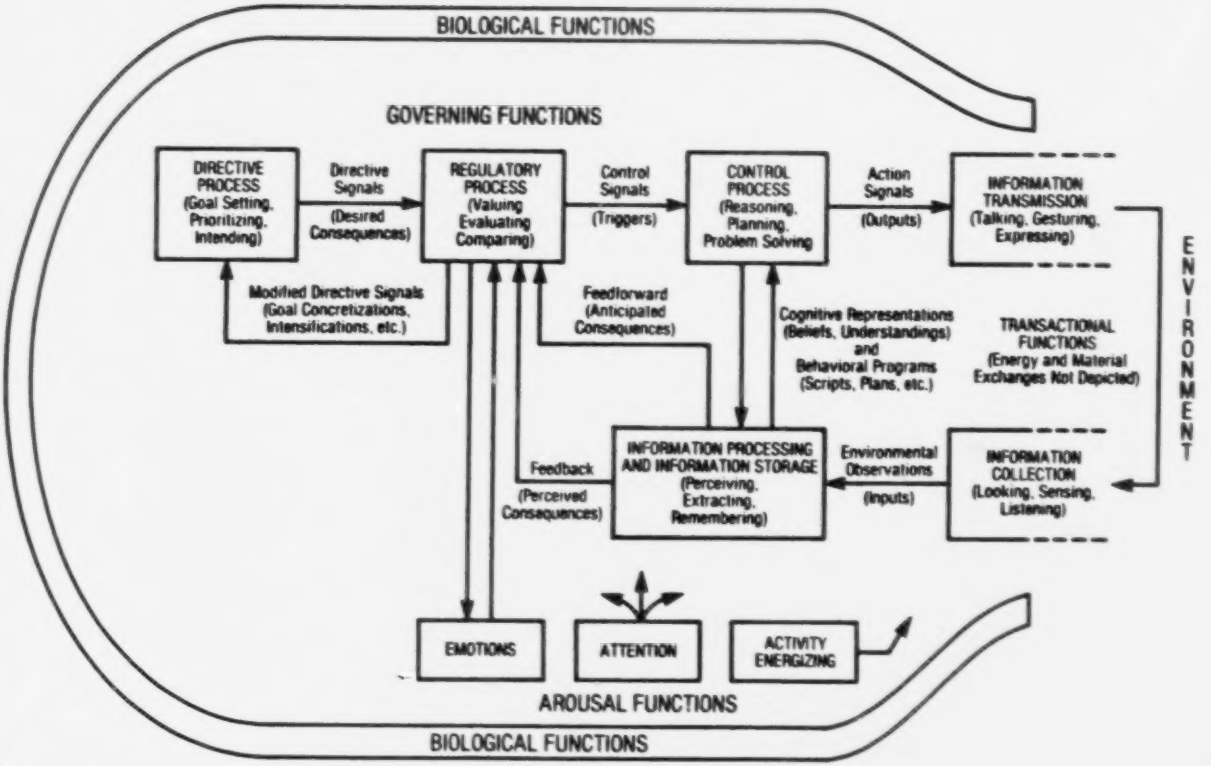
There are four types of subsystems accounted for by the Living Systems Framework (LSF). (For a complete discussion of this framework see D. Ford, in press.) Two were addressed in this study: 1) governing subsystems and 2) arousal subsystems. Each of their functions is discussed below.

The Governing Subsystems and Prosocial Behavior

The governing subsystem includes three processes: directive, regulatory, and control.

The Directive Process. Goal-directed behavior is a function of the directive process. The LSF assumes that people usually act in order to obtain desired consequences (i.e., goals). But people differ in the degree to which they actively set goals and in their priorities. These individual

Figure 1
A Representation of the Person as a Living System
(From M. Ford, 1984)



differences in directive thoughts can produce important differences in behavior. For example, children who deeply value the happiness and comfort of others will tend to give prosocial goals high priority and direct more of their behavior toward these goals.

Thus, making another's welfare a salient goal within a child's goal hierarchy should enhance prosocial behavior. Such goals may be acquired from parents who value prosocial behavior and encourage their child to accept their goals through their nurturance. Parents may communicate where they place prosocial behavior in their goal hierarchies during disciplinary encounters. Mothers who use forceful discipline when their child hurts another, but not in other discipline encounters, may communicate that "welfare of others" is of great importance (Zahn-Waxler, Radke-Yarrow & King, 1979). Each of these possibilities were examined in the present study.

The Regulatory Process. The regulatory process evaluates the appropriateness of goals and means and assesses goal-related progress. It sets boundary conditions on an individual's behavior by applying rules and standards for conduct. How are standards for prosocial conduct acquired? One possible method is parental use of induction, or other-oriented discipline (e.g., "Look how you've made Sam feel!"). Induction may establish a standard for the child to use when evaluating an event or course of action (i.e., Does it adversely affect someone else?).

Three other ways in which standards for prosocial behavior may be acquired are through parents' use of rewards, attribution, and exhortation (Grusec, 1982). These are methods for conveying information about appropriate and inappropriate behavior. Still another way to enhance the learning of prosocial rules and standards may be to create an emotional association with moral rules by using emotionally-laden exhortation

(Grusec, 1982; Zahn-Waxler, Radke-Yarrow & King, 1979). These possibilities are examined in the present study.

The Control Process. The control process selects plans to accomplish the goals and standards dictated by the directive and regulatory processes. Thus, the control process will determine prosocial behavior to the extent that reasoning and skill are involved. A great deal of research has focused on the reasoning processes involved in moral-judgment making. Such research has generally demonstrated that most naturally occuring prosocial behavior does not require sophisticated reasoning or mature judgment (Eisenberg, 1982; Radke-Yarrow, Zahn-Waxler, & Chapman, 1983).

A second aspect of prosocial behavior that involves the control process is the elicitation or creation of behavioral plans. Many situations do not call for elaborate planning; a familiar situation may effortlessly evoke a well-rehearsed script. Thus, building prosocial repertoires should enhance children's behavior. Parent's may promote such repertoires by suggesting how to make amends when the child hurts another (Zahn-Waxler et al., 1979) or by accepting the child's offers to perform prosocial acts (Grusec, 1982). These possibilities are examined in the present study.

The Arousal Subsystems and Prosocial Behavior

Past research has focused almost exclusively on the cognitive aspects of morality and altruism (Radke-Yarrow et al., 1983). This research has not been as fruitful as one might expect. In fact, an intriguing question is why children experience such dramatic changes with age in cognitive capabilities, but not in prosocial behavior. Most theories don't account for the chasm between cognitive control and actual behavior. What people do and say are not always well connected; something must activate "good

intentions." The failure to find a relationship between advanced moral cognition and increased prosocial behavior indicates that there are other relevant processes in effect. One such process is arousal, which the LSF asserts is responsible for variations in activity level.

The role of arousal in prosocial behavior patterns has not been directly addressed in research, although considerable evidence of its importance exists in two domains. First, there exists a positive relationship between affect and learning (Masters, Barden, & Ford, 1979). Thus, emotional arousal may be an important factor in learning prosocial behavior. Second, emotions affect the motivation of complex behavior. For example, temporary mood states exert reliable influences on prosocial behavior (e.g., Moore, Underwood, & Rosenhan, 1973). Persisting mood states may also be important in the development of prosocial behavior (Strayer, 1980). Perhaps the fact that nurturant parents have prosocial children is due to the creation of a positive affective state in the child through the security of a warm parental relationship. Additionaly, two studies have suggested that an activity-energizing force must be present to connect social cognition with prosocial behavior (Barrett and Yarrow, 1977; Feshbach, 1982). These possibilities are examined in the present study.

METHOD

Subjects

The sample consisted of 28 firstborn, home-reared children and their mothers. The children were between 20 and 31 months of age, with a mean age of 24 months (SD = 2.6 months). Most mothers had some college experience, with some having postgraduate degrees. Families were primarily Caucasian, nuclear, and intact.

Procedure and Measures

Multiple assessment techniques were used to quantify most of the mother and child behaviors in order to better represent each construct and reduce reliance on particular methodological procedures. Mothers' behavior was assessed via a) self-report questionnaires and b) observations made during three 1 1/2 hour visits in the home. Children's behavior was assessed using a) mother's report; b) observations in the home; and c) observations in a group play setting. Different instruments assessing the same variables and passing basic tests of reliability and validity were collapsed into a single score for that variable. Thus, no great weight was placed on any single item or scale.

Parent Behavior Variables. First, the LSF was used to determine which processes in the child would be involved in prosocial behavior. Second, parent variables that might affect those processes were selected for study. Third, only parent variables that had been reliably and validly indexed in published research were included in this study. This final criterion was applied to link the current study to the existing literature on prosocial development.

Eighteen behaviors were chosen and then organized into four composite variables. Because different parenting practices often affect more than one process in the child, parent variables were categorized using a strategy that took into account both theoretical and empirical linkages among variables. The categories and their defining behaviors are:

1. Teaching Values, Rules, and Standards.

- Espousing altruistic goals.
- Stating principles for conduct during discipline encounters.
- Using attributional statements of the child as a "good" person.
- Using forceful discipline only when the child hurts another.
- Using emotionally intense statements of principles for conduct during discipline only when the child has hurt another.
- Explaining the "other's" perspective in discipline

encounters.
- Rewarding prosocial acts.

2. Providing Opportunities for Rehearsal and Mastery.

- Accepting the child's offers of help even when inconvenient for the mother.
- Suggesting how the child might make amends after hurting another.

3. Providing Opportunities for Self-Regulation and Self-Control.

- Cooperating with the child's plans.
- Infrequently using power-assertive techniques.
- Infrequently using unexplained verbal prohibitions.

4. Providing Social-Emotional Support.

- Empathic caregiving by the mother.
- Using warm tones in commands directed at the child.
- Expressing affection toward the child.
- Infrequently using love withdrawal during discipline.

The first two categories focus on the child's directive/regulatory and control processes, respectively. The third category represents parenting practices that enhance children's capabilities for self-regulation of their social behavior. The fourth category includes parenting practices that primarily influence the child's emotional arousal processes.

Child Variables. The child prosocial behaviors assessed in this study were selected on the basis of two criteria: (a) salience of the behavior to parents and caregivers when asked to nominate prosocial 2-year-olds of their acquaintance (Bergin, in preparation); and (b) precedence in the research literature (although not necessarily with toddlers). Behaviors meeting both criteria were organized into four categories as shown in Figure 1 (see Bergin, 1986, for further explication of this four-fold scheme). A total prosocial behavior score was derived by summing the scores of these four composite variables. In addition, the child's persisting state of happiness was assessed.

Figure 2

Prosocial Behavior Variables Assessed in the Present Study
Organized by Presence of Rule and Other in Distress

	Another Person in Distress	No One in Distress
No Rule Present	COMPASSION • reacts empathically to anothers' distress • comforts others	AMIABILITY WITH PEERS • shares spontaneously • cooperative in play • enjoys others' pleasure • shares when requested to • ensures equity for peers
Rule is Present	REMORSE • expresses remorse when misbehaving	OBEDIENCE • complies with mother's commands

RESULTS

Age and gender were excluded as factors in these analyses because they were unrelated to any of the parent or child variables.

Relations Among Parent Variables.

There were few clear patterns of relationships among the individual parent variables, even within clusters. This result appears to be a consequence of the fact that there are multiple ways to affect each process in the child. In some cases mothers employ multiple methods concurrently, while in other cases particular methods are used exclusively.

Table 1 shows that there were also few clear patterns of relationships among the four clusters of parent variables. Evidently parents who were promoting their children's prosocial development via one process were not

Table 1

Correlations Among the Four Categories of Parent Behavior

	Teaching Values, Rules and Standards	Providing Opportunities for Rehearsal and Mastery	Providing Self-Regulation and Self-Control Opportunities
Providing Opportunities for Rehearsal and Mastery	.21		
Providing Opportunities for Self-Regulation and Self-Control	-.03	.16	
Providing Social-Emotional Support	-.01	.38*	.19

Note: Numbers presented are Pearson product-moment correlation coefficients. Significance levels are based on a one-tailed test.
* $p < .05$.

necessarily directing efforts at other processes as well. One exception to this generalization is that mothers who provided their child with social-emotional support also tended to provide opportunities for the child's rehearsal and mastery of prosocial behavior. Another significant relationship that is not shown in Table 1 is that mothers who provided opportunities for rehearsal and mastery tended to teach values and standards through the combined use of induction and rewards ($r = .41$, $p < .05$). However, the overall association between providing such opportunities and the remaining methods of teaching values, rules, and standards was not significant ($r = .21$).

Relations Between Parent and Child Variables

Table 2 displays the correlations between the composite parent and child variables. Both zero-order and partial correlations controlling for

Table 2

Relations Between Parent and Child Variables

PARENT BEHAVIORS	CHILD PROSOCIAL BEHAVIORS				
	Compassion	Amiability with Peers	Remorse	Obedience to Mother	Total Prosocial
Teaching Values,	.03	-.02	.01	-.03	.01
Rules and Standards	.07	.14	.06	-.07	.10
Providing Opportunities	.27*	.09	.13	.45***	.22
for Rehearsal and Mastery	.39*	.52***	.25*	.39**	.48***
Providing Opportunities					
for Self-Regulation	-.02	-.25*	.25*	.25*	-.01
and Self-Control	.07	-.07	.37**	.18	.19
Providing Social-	.41**	-.04	.08	.58***	.21
Emotional Support	.54***	.29*	.19	.54***	.46***

Note. The first number presented is the zero-order correlation; the second number is the correlation with the child's happiness score partialed out. Significance levels are based on a one-tailed test.

The correlation between children's obedience and mothers' providing opportunities for self-regulation and self-control was attenuated by the extreme responses of two mother-child pairs. These two mothers had the highest scores in the sample on this parent variable whereas their children were moderately low in obedience. Removing these families from the analysis resulted in a correlation of $r = .54$, $p = .00$ for the remaining 26 mother-child pairs.

* $p < .10$. ** $p < .05$. *** $p < .01$.

happiness are reported because the child's happiness score obscured the relationship between parent and child behavior. The mother behaviors do not correlate with child happiness. Thus, the effect happiness has on the relationship between mother and child behavior is an artifact of the effect happiness has on child behavior alone.

Overall, the parent behaviors that focused primarily on the child's directive and regulatory processes, labeled "Teaching values, rules, and standards," were not related to prosocial behavior. However, some of the components of this parent composite did show consistent patterns of

association with the prosocial behavior measures (See Table 3). Specifically, the use of other-oriented discipline and rewards for prosocial behavior were positively correlated with child prosocial behavior. Conversely, using forceful discipline only when the child hurt another, stating absolute principles of conduct, and using emotionally intense reprimands during discipline correlated negatively with most of the prosocial variables. Parental valuing of altruism and making attributional statements of the child as good were unrelated to prosocial behavior.

Table 3

Relations Between Child Prosocial Behavior and Components of Parent Behavior Category 1: Teaching Values, Rules, and Standards

PARENT BEHAVIORS	CHILD PROSOCIAL BEHAVIORS				
	Compassion	Amiability with Peers	Remorse	Obedience to Mother	Total Prosocial
Other-oriented Discipline and	.29*	.17	.03	.28*	.29*
Rewards for Prosocial Acts	.35*	.49***	.10	.25	.50***
Stating Principles, Selective Use of	.12	-.39**	-.44***	-.16	-.28*
Forceful Emotional Exhortation	.18	-.38**	-.40**	-.24	-.20

Note. The first number presented is the zero-order correlation; the second number is the correlation with the child's happiness score partialed out. Significance levels are based on a one-tailed test.
* $p < .10$. ** $p < .05$. *** $p < .01$.

Parental influences on the child's control process, labeled "Providing opportunities for rehearsal and mastery," were positively and significantly correlated with all of the prosocial behavior variables when the child's happiness score was partialed out. Research on the development of

prosocial behavior has traditionally focused largely on the transmission of values and the development of moral reasoning processes, but the present findings suggest a new direction. It appears that, at least in young children, prosocial behavior is more a function of prosocial scripts and habits than of general rules or principles of conduct.

Interestingly, mothers who more frequently provided their children with "Opportunities for self-regulation and self-control," the third composite, had children who scored significantly higher in remorse and obedience but not other types of prosocial behavior. This may be because this category of parenting behaviors is largely proscriptive in nature, focusing on what children should not do. Perhaps a more prescriptive orientation, focusing on what children should do, such as providing opportunities for rehearsal and mastery, is needed to affect the more proactive forms of prosocial behavior that do not involve rule violations. These results suggest that the use of highly controlling disciplinary techniques may actually detract from their intended effect.

Parenting behaviors primarily affecting the child's arousal processes, labeled "Providing social-emotional support," were positively and highly correlated with compassion, obedience, and the total prosocial score. The correlation with amiability toward peers was also marginally significant. These results demonstrate the importance of arousal processes in young children's social behavior.

DISCUSSION AND CONCLUSIONS

In sum, the results of this study suggest that the general profile of a mother with prosocial children is that of a warm, loving parent who makes the effort to provide opportunities for the child to learn and rehearse kind acts, rewards those acts, and helps the child focus on the other

person's perspective. Variations on this general pattern are common, however, and are associated with somewhat different kinds of prosocial behavior. For example, mothers who provide their children with opportunities for rehearsal and mastery of prosocial acts appear to be particularly effective in promoting amiability with peers. Alternatively, warm, empathic caregiving appears to be especially likely to promote obedience and compassion. Thus, there is some degree of specificity as well as some degree of generalization between mother behavior and children's manifestation of prosocial behavior.

This study has highlighted the importance of several parental influences on the child that have been virtually ignored in previous research on prosocial behavior. The relationship between child prosocial behavior and parental warmth or use of other-oriented discipline has been demonstrated by other researchers, although not necessarily with toddlers. However, this study has also pointed out that rewarding prosocial behavior, providing opportunities for self-regulation and self-control, and providing opportunities for rehearsal and mastery of prosocial behavior deserve more research attention than they have received.

It is clear that in order to understand prosocial behavior in depth we must take into account many processes within the developing child. We should particularly heed the evidence suggesting that, at least with young children, prosocial behavior research has overemphasized the role of rational cognitive processes and underemphasized the importance of behavioral repertoires and arousal processes, including the child's persisting affective state. Evidence for the importance of these processes has existed previously, yet it has not received a proportionate amount of researchers' attention. This oversight may exist because researchers have been limited by the traditions of both the early behaviorists and present-

day cognitivists and have not had an adequate framework for taking such processes into account. The LSF serves a valuable function by reminding us that cognitive processes are only one small component of prosocial behavior. The LSF can help researchers see prosocial behavior in a new light, opening up possibilities for integrating existing findings and generating productive new studies.

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